CERTIFICATE OF FILING

I hereby certify that this correspondence and every paper referred to therein as being enclosed is being transmitted to the United States Patent and Trademark Office via facsimile, EFS Web filing or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on the date indicated below.

Date: MAY 189 2010
By Maryette Ferguson

Docket No. 107101-10-WCG Confirmation No. 8885

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants

Johannes BARTHOLOMÄUS, et al.

Serial No.

10/718,112

Filed

November 20, 2003

For

ABUSE-PROFFED DOSAGE FORM

Art Unit

1618

Examiner

Melissa Jean Perreira

Mail Stop Amendment Hon. Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR §1.131

SIR:

We, the undersigned, hereby declare as follows:

- 1. We are the joint inventors of the subject matter disclosed and claimed in the above-identified application.
- 2. The present invention was reduced to practice in Germany prior to February 1, 2003, which is earlier than the indicated publication date of the Dow reference relied upon by the patent examiner to reject the claims of the above-identified application.

The present invention was conceived in Germany at least as early as November 8, 3. 2002. On that date, Dr. Johannes Bartholomäus and Mr. Heinrich Kugelmann sent a Confidential Internal Memorandum to Dr. Kurt Hellfeldt, head of the patent department at Grünenthal GmbH. A true and correct copy of that memorandum is attached hereto as Exhibit A. The memorandum contained typographical errors regarding the date in the title, after the signatures on page 2 and the footer, in the title and after the signatures referring to "8. Oktober 2002," and in the footer referring to "8 OKT 2002," in both cases meaning October 8, 2002. However, the date should have been correctly indicated as November 8, 2002, and, indeed Exhibit A is correctly dated in the upper right-hand corner as "2002-11-08," meaning November 8, 2002. Also, the date stamp at the top, in the middle of the page, indicates "Eingang - 8 Nov. 2002 ST-Patente," which translated into English roughly means "Received 8 November 2002 Patent Department." Accordingly, the memorandum was corrected some time later, and a copy of the corrected version is attached hereto as Exhibit B. Other than the correction to the abovementioned dates, the text of Exhibit A and Exhibit B is identical. Since the memorandum is in the German language, a certified English language translation of Exhibit B is attached hereto as Exhibit C. This memorandum documents the initial conception of an idea Dr. Bartholomäus and Mr. Kugelmann had "for a dosage form that is more resistant to grinding in a mortar/pulverising." See Exhibit C, the subject header. (This initial conception was subsequently complemented by the inventive contributions of Dr. Elisabeth Arkenau-Marić.) Moreover, this memorandum documents that this purpose is achieved "for tablets or film tablet cores if these contain a high proportion of high molecular weight polyethylene oxide." See Exhibit C, first page, last paragraph, first sentence.

- The present invention also was actually reduced to practice in Germany at least as 4. early as January 16, 2003. On that date, Mr. Sascha Weber, a laboratory worker and employee of Grünenthal GmbH, working at the direction of Dr. Bartholomäus and Mr. Kugelmann, formed tablets according to the present invention. Attached as Exhibit D is a true and correct copy of page 0564 of the laboratory manual from Developing Laboratory 1 (EL1) at the Grünenthal facilities, which laboratory notebook page documents Mr. Weber's work in this regard. Exhibit E is the same page, but having the handwriting on Exhibit D typed out. Exhibit F is a certified English-language translation of Exhibit E. It is clear from Exhibit F, that Tramadol 100 mg controlled-release tablets were made under batch "#CAMF13" on January 16, 2003, by compressing a composition comprising 33.3 wt. % tramadol HCl and 66.6 wt. % Polyox WSR 303 (polyethylene oxide having an average molecular weight of 7,000,000 g/mol) in a tabletting tool at a temperature of 80°C. This method corresponds to the sintering procedure described in the above-identified application. This laboratory notebook page is initialed and dated by Mr. Weber towards the top of the page in the right-hand margin, and co-signed by Johannes Bartholomäus at the bottom. The date the page is indicated to be initialed by Mr. Weber is January 16, 2003; and the date the page is co-signed by Johannes Bartholomäus is January 27, 2003.
- 5. It is also apparent from Exhibit F that a second batch of tramadol HCl tablets, designated "#CAMF14," having the identical composition as #CAMF13, was also made by Mr. Weber on January 22, 2003.
- 6. Another batch of tramadol HCl tablets having the same composition as batches #CAMF13 and #CAMF14 was made by Mr. Weber on February 6, 2003, compressed with a tablet weight of 150 mg corresponding to 50 mg Tramadol compressed with 7 mm punch and

die. This third batch is designated "CBMF16". Attached as Exhibit G is a true and correct copy of another laboratory record, describing this work. Exhibit H is a reproduction of Exhibit G, but having the handwriting on Exhibit G typed out. Exhibit I is a certified English-language translation of Exhibit H. It is clear from Exhibit I that on February 6, 2003, Mr. Weber once again made tramadol HCl tablets by compressing a composition comprising 33.3 wt. % tramadol HCl and 66.6 wt. % Polyox WSR 303 (polyethylene oxide having an average molecular weight of 7,000,000 g/mol) in a tabletting tool at a temperature of 80°C. The initials "S.W." are set forth in the column labeled "Weigh in," indicating that Mr. Weber performed this work. Remarks are given at the very end of the document that "[t]he hardness could not be determined by the measuring device," and "[t]he tablets have slightly plastic properties and do not exhibit any defined break." The breaking strength measuring device then in use at Grünenthal had an upper limit of 500 N, and, therefore, any breaking strength that could not be determined by the measuring device must be greater than 500 N. In other words, the breaking strength of the tablets of batch #CBMF 16 must have exceeded 500 N because the breaking strength was beyond the ability of the measuring device to measure. Further, since the tablets of batches #CAMF 13 and #CAMF 14 had the same composition as those of CBMF 16, and were prepared in a similar manner, the tablets of batches #CAMF 13 and #CAMF 14 likewise had a breaking strength in excess of 500 N.

7. Exhibit J is the certification of the translator, Mary Peeler, attesting to the correctness and the accuracy of the English language translations of Exhibits C, F and I. The German language documents of Exhibits B, D, E, G and H were submitted to Ms. Peeler as a group and she translated them as a group and gave a single certification as to the group.

8. We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and that the foregoing statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated:

By

Heinrich Kugelmann

Dated: 2010-05-12

By
Elisabeth Arkenau-Marić

EXHIBIT A

TO RULE 131 DECLARATION OF THE INVENTORS

VERTRAULICH

INTERNE MITTEILUNG



Forschung und Entwicklung Präklinische Entwicklung Pharmazeutische Entwicklung

Von:

Dr. Johannes Bartholomäus

Heinrich Kugelmann

An:

Herrn Dr. Hellfeldt

z. K.:

Herrn Dr. Kerdar

Herrn Dr. Langner

Eingang

-8. Nov. 2002

MST-Patente

2002-11-08 FE-PE/JBm

Mitteilung zu einer Idee einer gegen Mörsern/Pulverisieren resistenteren Arzneiform (Stand 8. Oktober 2002)

Lieber Herr Hellfeldt,

vor Abschluß der Geheimhaltungsvereinbarung mit ALZA zu OROS möchten wir Ihnen den Stand einer Idee zu einer gegen Mörsern/Pulverisieren resistenteren Arzneiform mitteilen.

An Hand handelsüblicher OROS Systeme läßt sich feststellen, daß diese beim Versuch sie zu mörsern, dem Vorgang einen gewissen Widerstand entgegenstellen. Zunächst wird dieser Widerstand unterstützt durch den Überzug (z. B. Celulloseacetat). Wird der Überzug entfernt bzw. das OROS grob zertrümmert, so ist die anschließende feinere Pulverisierung mittels eines Mörsers sehr schwierig, es verbleiben gröbere Partikel. Wird versucht das Ergebnis des Zertrümmerns und Mörserns mit Wasser zu extrahieren, so entsteht eine viskose Suspension. Die mechanischen Eigenschaften des OROS Kerns bzw. die Viskosität ist vermutlich auf den hohen Anteil an Polyethylenoxid (auch Polyethylenglykol genannt) mit einem sehr hohen Molekulargewicht (>100 000 bis zu 15 000 000) zurückzuführen. Die Polyethylenoxide werden im mehreren OROS Patenten bzw. Patentanmeldungen beschrieben.

Der Widerstand gegen das Mörsern läßt sich dann für Tabletten bzw. Filmtablettenkerne erzielen, wenn diese einen hohen Anteil an hochmolekularem Polyethylenoxid enthalten. Wir haben entsprechende Polyethylenoxide bestellt und wollen diese zu Tabletten verarbeiten. Wir wollen beim Mörsern/Pulverisieren prüfen, ob diese Tabletten leicht in Pulver zu überführen sind oder ob nur gröbere Partikel erzielt werden. Darüberhinaus wollen wir prüfen, ob eine viskose Suspension entsteht. Gegen das Mörsern können ebenfalls andere hochmolekulare "Plastikstoffe" eingesetzt werden, wie Polyethylen, Polypropylen, Polyviniylchlorid, Polycarbonat, Polystyrol und Polyacrylat.

Wir wollen prüfen, ob die Freisetzungseigenschaften beeinflußt werden, insbesondere in Verbindung mit Retardpolymeren wie Methylhydroxypropylcellulose (siehe unsere Patentanmeldung zu retardierten Formen von BN200/CG5503). Ggf. werden die

Seite 1

pharmazeutisch erforderlichen Freisetzungsprofile durch Modifikation der Anteile der Retardpolymeren und des Polyethylenoxids bzw. der anderen hochmolekularen Plastikstoffe, die auch einen eigenen Beitrag als Retardpolymer leisten können, eingestellt.

Wir wollen auch prüfen, ob die Polyethylenoxid- bzw. Plastikstoff-haltigen Formulierungen mit unseren anderen Prinzipien zur Mißbrauchserschwernis (GRA3137, GRA3137/A, GRA3155, GRA3156, GRA3159, GRA3164) kompatibel bzw. kombinierbar sind.

Mit freundlichem Gruß

(Dr. Johannes Bartholomäus)

Heinrich Kugelmann)

Aachen, den 8. Oktober 2002

EXHIBIT B

TO RULE 131 DECLARATION OF THE INVENTORS

VERTRAULICH

INTERNE MITTEILUNG



Forschung und Entwicklung Präklinische Entwicklung Pharmazeutische Entwicklung

Von:

Dr. Johannes Bartholomäus

Heinrich Kugelmann

2002-11-08 FE-PE/JBm

An:

Herrn Dr. Hellfeldt

z. K.:

Herrn Dr. Kerdar

Herrn Dr. Langner

Mitteilung zu einer Idee einer gegen Mörsern/Pulverisieren resistenteren Arzneiform (Stand 8. November 2002)

Lieber Herr Hellfeldt,

vor Abschluß der Geheimhaltungsvereinbarung mit ALZA zu OROS möchten wir Ihnen den Stand einer Idee zu einer gegen Mörsern/Pulverisieren resistenteren Arzneiform mitteilen.

An Hand handelsüblicher OROS Systeme läßt sich feststellen, daß diese beim Versuch sie zu mörsern, dem Vorgang einen gewissen Widerstand entgegenstellen. Zunächst wird dieser Widerstand unterstützt durch den Überzug (z. B. Celulloseacetat). Wird der Überzug entfernt bzw. das OROS grob zertrümmert, so ist die anschließende feinere Pulverisierung mittels eines Mörsers sehr schwierig, es verbleiben gröbere Partikel. Wird versucht das Ergebnis des Zertrümmerns und Mörserns mit Wasser zu extrahieren, so entsteht eine viskose Suspension. Die mechanischen Eigenschaften des OROS Kerns bzw. die Viskosität ist vermutlich auf den hohen Anteil an Polyethylenoxid (auch Polyethylenglykol genannt) mit einem sehr hohen Molekulargewicht (>100 000 bis zu 15 000 000) zurückzuführen. Die Polyethylenoxide werden im mehreren OROS Patenten bzw. Patentanmeldungen beschrieben.

Der Widerstand gegen das Mörsern läßt sich dann für Tabletten bzw. Filmtablettenkerne erzielen, wenn diese einen hohen Anteil an hochmolekularem Polyethylenoxid enthalten. Wir haben entsprechende Polyethylenoxide bestellt und wollen diese zu Tabletten verarbeiten. Wir wollen beim Mörsern/Pulverisieren prüfen, ob diese Tabletten leicht in Pulver zu überführen sind oder ob nur gröbere Partikel erzielt werden. Darüberhinaus wollen wir prüfen, ob eine viskose Suspension entsteht. Gegen das Mörsern können ebenfalls andere hochmolekulare "Plastikstoffe" eingesetzt werden, wie Polyethylen, Polypropylen, Polyviniylchlorid, Polycarbonat, Polystyrol und Polyacrylat.

Wir wollen prüfen, ob die Freisetzungseigenschaften beeinflußt werden, insbesondere in Verbindung mit Retardpolymeren wie Methylhydroxypropylcellulose (siehe unsere Patentanmeldung zu retardierten Formen von BN200/CG5503). Ggf. werden die

pharmazeutisch erforderlichen Freisetzungsprofile durch Modifikation der Anteile der Retardpolymeren und des Polyethylenoxids bzw. der anderen hochmolekularen Plastikstoffe, die auch einen eigenen Beitrag als Retardpolymer leisten können, eingestellt.

Wir wollen auch prüfen, ob die Polyethylenoxid- bzw. Plastikstoff-haltigen Formulierungen mit unseren anderen Prinzipien zur Mißbrauchserschwernis (GRA3137, GRA3137/A, GRA3155, GRA3156, GRA3159, GRA3164) kompatibel bzw. kombinierbar sind.

Mit freundlichem Gruß

(Dr. Johannes Bartholomäus)

(Heinrich Kugelmann)

Aachen, den 8. November 2002

EXHIBIT C

TO RULE 131 DECLARATION OF THE INVENTORS

CONFIDENTIAL INTERNAL MEMO

8.11.02 FE-PE/JBm

From:

Dr. Johannes Bartholomäus

Heinrich Kugelmann

To:

Dr. Hellfeldt

For information:

Dr. Kerdar

Dr. Langner

Notice regarding an idea for a dosage form that is more resistant to grinding in a mortar/pulverising (as at 8 November 2002)

Dear Herr Hellfeldt

Before expiry of the secrecy agreement with ALZA regarding OROS we would like to advise on the status of an idea for a dosage form that is more resistant to grinding in a mortar/pulverising.

It can be determined using commercially available OROS systems that these put up a certain amount of resistance when attempts are made to grind them in a mortar. This resistance is firstly assisted by a covering (e.g. cellulose acetate). If the covering is removed or the OROS is coarsely broken up, then subsequent finer pulverisation in a mortar is very difficult as coarser particles will still remain. If an attempt is made to extract the result of the breaking and grinding with water, then a viscous suspension will be formed. The mechanical properties of the OROS core or the viscosity is assumed to be due to the high proportion of polyethylene oxide (also called polyethylene glycol) with a very high molecular weight (>100 000 to 15 000 000). Polyethylene oxides are described in many OROS patents or patent applications.

The resistance to grinding in a mortar can then be achieved for tablets or film tablet cores if these contain a high proportion of high molecular polyethylene oxide. We have ordered appropriate polyethylene oxides and want to process these into tablets. We want to test during grinding in a mortar/pulverising whether these tablets are easily reduced to powder or whether only coarser particles are formed. In addition, we want to test whether a viscous suspension results. Other high molecular "plastic substances" such as polyethylene, polypropylene, polyvinyl chloride, polycarbonate, polystyrene and polyacrylate can likewise be used to resist grinding in a mortar.

We want to test whether the release properties are influenced, in particular in conjunction with release retardant polymers such as methyl hydroxypropyl cellulose (see our patent application relating to controlled-release forms of BN200/CG5503). If necessary, the pharmaceutically required release profiles are adjusted by modifying the proportions of the release retardant polymers and the polyethylene oxide or the other high molecular plastic substances that can also make their own contribution as release retardant polymers.

We also want to test whether the formulations containing polyethylene oxide or plastic substance are compatible or can be combined with our other principles for complicating abuse (GRA3137, GRA3137/A, GRA3155, GRA3156, GRA3159, GRA3164).

(Dr. Johannes Bartholomäus)

(Heinrich Kugelmann)

Aachen, 8 November 2002

EXHIBIT D

TO RULE 131 DECLARATION OF THE INVENTORS

gelesen und verstanden

Datum:

EXHIBIT E

TO RULE 131 DECLARATION OF THE INVENTORS

EXHIBIT F

TO RULE 131 DECLARATION OF THE INVENTORS

Laboratory Record No 0564 CONFIDENTIAL

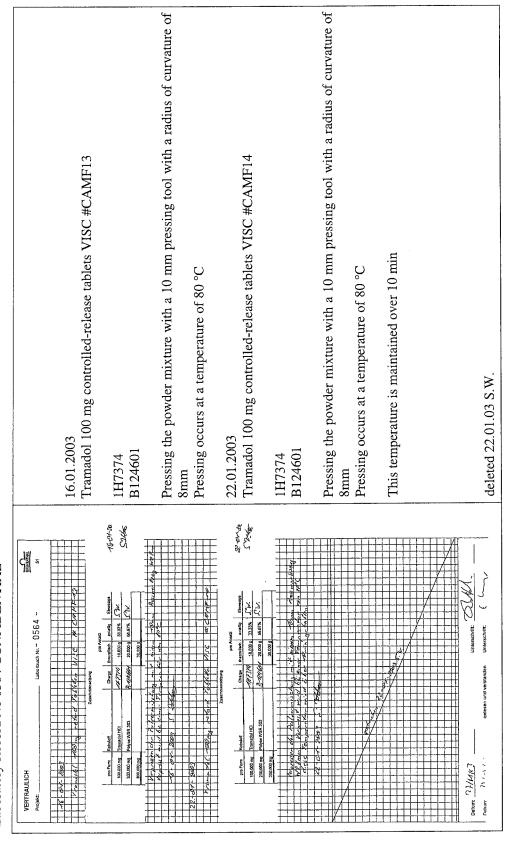


EXHIBIT G

TO RULE 131 DECLARATION OF THE INVENTORS

Grünenthal GmbH Pharmazeutische Entwicklung 52078 Aachen

্রত Produkt: Tramadol এউলের retard Tabletten VISC Datum: 06,02.2003

Produkt: Tramadol 100mg retard Tabletten VISC			Charge: CBMF16
Ansatzgröße	100 Stck		
Gewicht	300 mg	Härte	
Kapselgröße	-	Höhe	3,90 mm - 4, 12 mm
Durchmesser	7 mm	Abrieb	-
Wölbungsradius _	mm	Zerfall	1 April
Gravur _	Bruchkerbe / ohne	Maschine	Handpresse
Farbe _	Weiß	Geschw.	
		Steghöhe	· · · · · · · · · · · · · · · · · · ·

Zusammensetzung

pro Ansatz

			pro Ansatz		
pro Form	Rohstoff	Charge	theoretisch	anteilig	Einwaage
50.000 mg	Tramadol HCl	147374	5.000 g	33.33%	S.W.
100.000 mg	Polyox WSR 303	1117374 B124601	10.000 g	66.67%	S.W.
150.000 mg			15.000 g		
					
·				····	

Grünenthal GmbH Pharmazeutische Entwicklung 52078 Aachen

රව Produkt: <u>Tramadol 1</u> 00mg retard Tabletten VISC	Datum: OC OZ 2803 Charge: CBMF16
Herstellung	
Reinige alle Maschinen und Geräte entsprechend den Richtlinien der PharmBtrV	
2. Wiege die Rohstoffe, Tramadol HCl und Polyox WSR303 ein	
3. Siebe die Rohstoffe durch ein 0.5mm Handsieb	
4. Mische die Rohstoffe im Rollglasmischer	
5. Verpresse das Granulat bei einer Temperatur von 80°C	

Bemerkung:

Die Tableton wyrden mit einem Drehmsment von

80 Nm varpresst.

Die Karle Konnle vom Hossgerät nicht er fasst werden.

Die Vasketlan ha ben leicht plastische Eigenschaften und

zeig en Keinen eindentigen Bruch.

EXHIBIT H

TO RULE 131 DECLARATION OF THE INVENTORS

GRA3188US

		Die Tabletten wurden mit einem Drehmoment von 80 Nm verpresst. Die Härte konnte vom Messgerät nicht erfasst werden. Die Tabletten haben leicht plastische Eigenschaften und zeigen keinen eindeutigen Bruch.
Produkt: Tramadol 198mg retard Tabletten VISC Charge: CBMF16 Herstellung	 Reinige alle Maschinen und Geräte entsprechend den Richtlinien der PharmBtrV Wiege die Rohstoffe, Tramadol HCl und Polyox WSR303 ein Siebe die Rohstoffe durch ein 0.5mm Handsieb Mische die Rohstoffe im Rollglasmischer Verpresse das Granulat bei einer Temperatur von 80°C 	Bemerkung. Die Table Ven wurden mit einem Diehangunent von 80 Nm varpesst. Die Varle Konnle vom Hessaciät micht erfasst werden. Die Vasletten ha ben leicht plestische Eigenschaften einet 200 eigen keinen einelestisch Bruch.

EXHIBIT I

TO RULE 131 DECLARATION OF THE INVENTORS

Grünenthal GmbH

06.02.03

Product: Tramadol 500 mg controlled-release tablets VISC

Batch: CBMF 16

Batch size

100 units

Weight

300 mg

Height

3.90 mm - 4.12 mm

Diameter

7 mm

Cut

break notch / without

Machine

hand press

Colour

white

Composition

Per Batch

Per Form	Raw Material	Batch	Theoretically	Proportionally	Weigh in
50 000 mg	Tramadol HCl	147374	5 000 g	33.33%	S.W.
100 000 mg	Polyox WSR 303	B124601	10 000 g	66.67%	S.W.
150 000 mg			15 000 g		

Grünenthal GmbH

06.02.03

Product: Tramadol 500 mg controlled-release tablets VISC **Batch:** CBMF 16

Manufacture

- 1. Clean all machines and devices in accordance with the guidelines of PharmBtrV [German legislation ruling the production of pharmaceuticals]
- 2. Weigh in the raw materials, Tramadol HCl and Polyox WSR303
- 3. Sieve the raw materials through a 0.5 mm hand sieve
- 4. Mix the raw materials in the glass roller mixer
- 5. Press the granulate at a temperature of 80°C

Remarks:

The tablets were pressed at a torque of 80 Nm.

The hardness could not be determined by the measuring device.

The tablets have slightly plastic properties and do not exhibit any defined break.

EXHIBIT J

TO RULE 131 DECLARATION OF THE INVENTORS

DECLARATION

I, the undersigned, hereby declare that I am knowledgeable in both the German and English languages, and that the following is a true and accurate translation into the English language of the attached German language document. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that the foregoing statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 2nd day of March 2010

MARY PEELER

UNIT 4, 55 OWEN STREET PORT MACQUARIE NEW SOUTH WALES 2444 AUSTRALIA